COUNCIL OF CHIEF STATE SCHOOL OFFICERS

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Resource Center on Educational Equity — State Education Assessment Center

April 24, 1995

William F. Caton, Secretary
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington, DC 20554

Re: Regulations for Automatic Vehicle Monitoring Systems; PR Docket No. 93-61

Dear Mr. Caton:

This letter, on behalf of the Connectivity for Learning Coalition, outlines our concerns about the FCC's recent decision in PR Docket No. 93-61. We believe that parts of the decision remove Part 15 wireless devices as an affordable and reliable alternative for connecting schools and libraries to the NII. We would appreciate the FCC's careful reconsideration of the four specific requests stated in the enclosed Connectivity for Learning Coalition's Petition for Reconsideration.

Sincerely,

Gordon M. Ambach
Executive Director

Enclosure

cc: Commissioners, FCC
Regina Keeney, Chief, Wireless Technology Bureau, FCC
Richard Smith, Chief, Office of Engineering & Technology, FCC

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Part 90 of the	)	PR Docket No. 93-61
Commission's Rules to Adopt	)	
Regulations for Automatic	)	
Vehicle Monitoring Systems	)	

To: The Commission

PETITION FOR RECONSIDERATION
OF THE
CONNECTIVITY FOR LEARNING COALITION

1. The Connectivity for Learning Coalition[1/], requests the Commission to reconsider and clarify the Report and Order released on February 6, 1995 in this proceeding (the "Order"). There are four parts of the Order we would like to see changed, namely:

- Revise the new rules to allow full Part 15 power with antenna heights up to 15 meters so schools and libraries can use the technology;
- In the alternative, include "educational uses" of the spectrum to employ full Part 15 power with antennas up to 15 meters along with the existing exemption for public safety and special emergency uses;
- Do not permit voice communications that interconnect with the public switched network; and,
- Do not grandfather incompatible uses that would cause interference on this part of the spectrum

What follows is a more detailed explanation of our concerns and requests.

[1/]The Connectivity for Learning Coalition is made up of the organizations listed on the signature page.

I. Upon Reconsideration, The Commission Should Remove Antenna Height From Being Part of Any Criteria To Determine If A Part 15 Device Is Causing Harmful Interference To Location Monitoring Service (LMS) Multilateration Systems. Alternatively, The Commission Should Revise Its New Rules To Provide That Antenna Height of 15 Meters Or Less Will Be Deemed Not To Be Causing Interference To LMS Multilateration Devices.

2. The Connectivity for Learning Coalition is concerned about providing affordable and efficient connections to the National Information Infrastructure (NII) for schools, libraries, and other learning institutions. We believe that wireless communication is an inexpensive option for accomplishing this goal.

3. At all levels, the ability of students, teachers, and parents to communicate with one another and to access on-line resources and the Internet will be a critical part of education in the information age. Part 15 devices using the 900 MHz band have the potential to provide the breadth of services schools need at a cost/value relationship that schools and libraries can afford. To increase arbitrarily the cost of using these networks would negatively impact the public interest in many respects.

4. In 1985, the Commission adopted rules that allowed unlicensed spread spectrum operations in the 902-928 Mhz band subject to specified power limits.[2/] In response to the Commission's encouragement, Part 15 manufacturers have invested hundreds of millions of dollars in the research, development and

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[2/] First Report and Order, Gen. Docket 81-413, 101 FCC 2d 419 (1985).

production of new commercial and consumer products. Commission actions encouraging Part 15 manufacturers to develop more and better products were in the public interest. The Commission has, by these actions, stimulated technological advances that can provide low cost, reliable, Part 15 wireless communications products and services for all public and private sectors of our economy, including the education sector. Whether these services are communications from a wireless phone, the use of wireless modems in schools, colleges, universities and libraries, or the provision of data to children with computers in schools that are not hardwired for interconnection to the telephone network which is a necessary gateway to the NII, the public interest and our economy are being well served.

5. Some manufacturers of certain Part 15 devices that could provide NII connectivity to schools and libraries provide those connections by using outdoor antennas that are higher than 5 meters.[3/] The FCC's new rule section 90.361(c)(2)(ii)(A) threatens the viability of this technology for schools and libraries. It allows a Part 15 device to use outdoor antennas that are higher than 5 meters and still be deemed not to be causing interference to LMS multilateration receivers <u>if the antenna is less than 15 meters and reduces its power as specified as the antenna height is increased over 5 meters. The Coalition believes that this height</u>

[3/] Metricom, Inc., for example, manufactures wireless modem equipment that uses antennae mounted on top of structures significantly higher than 5 meters above ground.

power tradeoff will result in increased expense to schools, libraries, and other learning institutions seeking to make use of such Part 15 devices because more devices will be required as power is reduced. The costs of connectivity should not be increased by such FCC actions.

6. Many Part 15 devices for the various applications that the Coalition cares about are located above the 5 and 15 meter thresholds[4/] (on building tops, utility light poles, water tanks, and on communication towers) in order to attain necessary building penetration and coverage. In the overwhelming majority of cases, these Part 15 devices are located on street light poles up to 15 meters above the ground. The power reduction proposed for 15 meter above-the-ground operations by new rule section 90.361(c)(2)(ii)(A) would not allow all of these pole-top radios to function in an acceptable manner. At the absolute minimum, any Commission resolution to this proceeding on reconsideration must provide for the continued and expanded operation of existing and new devices, within the limits of existing Part 15 rules, at pole-top locations.

7. As representatives of our nation's leading education and library organizations, the Connectivity for Learning Coalition asks that the FCC not disrupt the present or future use of the 900 Mhz band by Part 15 products. Deletion of new rule section 90.361(c)(2) would remove antenna height from being part of any

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4/ See new rule section 90.361(c)(2)(ii)(A).

criteria to decide if a Part 15 device is causing harmful interference to LMS multilateration systems. Therefore, Part 15 devices using an outdoor antenna that met the provisions of new rule section 90.361(c)(1) could be at any height and still be deemed not to be causing harmful interference to LMS multilateration receivers. The height/power limitation of new rule section 90.361(c)(2)(ii)(A) is simply inadequate for the many beneficial applications that Part 15 devices can provide to improve the quality of learning for this country's young people.

8. If the Commission does not modify new rule section 90.361 (c)(2) as requested herein, many Part 15 devices are vulnerable to being shut down by providers of the newly created LMS due to the interference these Part 15 devices will undoubtedly cause those multilateration systems.[5/] This is manifestly unfair to those whom the Coalition represents who are actual or potential users of Part 15 devices deployed and operated in complete compliance with all Part 15 rules, and who share the spectrum extremely well with other current users of the band. Users of Part 15 devices should not be penalized because of this proceeding; the record in this proceeding is replete with evidence about the vulnerability of multilateration system receivers to interference.[6/] Multilateration LMS systems

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[5/] See 47 C.F.R. § 15.5(c) (1994) (requiring operators of Part 15 devices to cease operation should harmful interference occur to authorized users of the spectrum).

[6/] See, e.g., Ex Parte Comments of the Ad Hoc Gas Distribution Utilities Coalition at 7, filed Aug. 12, 1994; Ex (continued...)

are not good spectrum sharers. There are other locations on the spectrum suitable for LMS multilateration technology, locations that will not affect Part 15 devices.[7] To limit or foreclose to the education and library communities the benefits of Part 15 products and services in order to encourage investment in outdated LMS technology is, therefore, not in the public interest. If the Commission cannot be dissuaded from enacting some type of height criteria, then the height criteria must be no less than 15 meters and radios at that height must be allowed to operate at the fully authorized Part 15 power levels. New rule section 90.361(c)(2) should be eliminated or revised to read: "(2) The antenna is 15 meters or less in height above ground."[8]

9. The Coalition is concerned about the height/power issue not only from a cost perspective, but also from a health and safety perspective. Many of our nation's schools, libraries, and

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[6](...continued)
Parte Comments of Itron at 1, filed Aug. 12, 1994; Ex Parte Comments of Part 15 Coalition at 3, filed Aug. 12, 1994; Comments of Ademco at 6-8, filed Mar. 15, 1994; Comments of Metricom at 8-11, filed Mar. 15, 1994; G.K. Smith, "Interf. Analysis of Part 15 Devices and LMS Wideband Systems," attached as Annex 2 to Further Comments of MobileVision, filed Mar. 15, 1994; TIA Study, Technical Conclusions at 10, filed Oct. 22, 1993; Comments of Metricom at App. A, filed Jun. 29, 1993.

[7] See, e.g., Comments of Lockheed IMS at 4, filed June 23, 1993 (5.8 GHz band); Comments of NATA at 11-12, filed June 29, 1993 (PCS spectrum); Comments of the Part 15 Coalition at 13-15, filed June 29, 1993 (2 GHz band or PCS spectrum); Comments of Saab-Scania Combitech at 11, filed June 29, 1993 (2450-2470 MHz); Comments of Sensormatic at 19-20, filed June 29, 1993 (2 GHz band).

[8] Such a revision would a fortiori result in a deletion of new rule section 90.361(c)(2)(ii).

universities have asbestos insulation. To hardwire a school properly for NII connectivity demands a great deal of money and unnecessarily exposes our nation's youth to a potential health hazard as the asbestos insulation must be disturbed or removed. Cost efficient Part 15 wireless connectivity to the NII cannot take place without the necessary building penetration by the radio signals. Building penetration cannot take place without the requisite antenna height and power. In fact, because of the expense and logistics of dealing with the asbestos problem, many schools and libraries may not be able to consider hardwiring for connectivity.

II. If the Commission Does Not Delete New Rule Section 90.361(c)(2) or Modify It As Specified Above, Upon Reconsideration, The Commission Should Include Educational Uses Among The Entities Specified In New Rule Section 90.361(c)(2)(ii)(B).

10. However laudable the Commission's action was in including public safety and special emergency use as eligibles under Subparts B or C of Part 90 within new rule section 90.361(c)(2)(ii)(B), the Commission's action falls short of what is needed by this nation's youth and by life-long learners who depend on libraries and other public places of learning. The Commission must include educational uses within this new rule section.[9/] However important public safety and special emergency uses of the spectrum are (and the

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[9/] Educational uses include those by public schools, public libraries or local public education agencies. Disputes about whether a particular school, library or agency qualifies for such use should be resolved by obtaining written documentation on the matter from educational authorities in each state.

Coalition believes that they are very important), they pale by comparison to those uses focused on the education of this nation's youth. Indeed, what could be a more important use?

11. A major plank of the Clinton Administration's policy platform has been the promotion and development of the NII. The NII has been described as a "network of networks" that will eventually connect Americans in all walks of life, allowing them to use a vast array of communications technologies and services to improve the quality of life. The Vice President clearly articulated a vision of the NII in a speech in January of last year when he said:

> We cannot tolerate--nor in the long run can this nation afford-- a society in which some children become fully educated and others do not; in which some adults have access to training and lifetime education, and others do not. Nor can we permit geographic location to determine whether the information highway passes by your door.[10/]

The Vice President also has set a worthy goal of connecting every classroom, library, and hospital to the NII by the year 2000.[11/]

12. As with the NII, education has been a key issue with both the Administration and Congress, as evidenced by the passage of the

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[10/] Text of Vice President Gore's Prepared Remarks to the Television Academy on Telecommunications Policy, U.S. Newswire, Jan. 11, 1994, available in LEXIS, News Library, Curnws File.

[11/] See, e.g., Rochelle L. Stanfield, Connections Mean a Lot for Schools, 1994 Nat'l J. 2849.

"Goals 2000: Educate America Act."[12/] Clearly, there is a strong linkage between the development of the NII and the improvement of the nation's K-12 education system. Secretary of Education Richard W. Riley testified last year before the Senate Committee on Commerce, Science and Transportation that the NII "is an essential tool for achieving the National Education Goals."[13/] As many education experts, teachers, and policy leaders have noted, including the President and key members of Congress, the NII promises to provide schools with the ability to tap into vast stores of information, get in touch with other classes and teachers to compare information, and share experiences and ideas more broadly than has ever been possible before. It promises to open a true "window to the world" for the classroom and its students, providing a rich source of information and ideas that children can access no matter where their school is located.

13. Ensuring that the NII is deployed as rapidly and widely as possible is, therefore, a key to improving our education system and enhancing the learning process. The Administration has clearly articulated that it will be strong public-private partnerships that will largely create the NII. It has also, quite rightly, said that the government has a clear role in ensuring that policies are adopted that both stimulate private sector investment and ensure

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[12/] Public Law 103-227, 108 Stat. 125 (1994).

[13/] Hearings on S. 1822 Before the Senate Committee on Commerce, Science and Transportation, 103d Cong., 2d Sess. (May 25, 1994) (statement of Richard Riley, Secretary of Education).

that the public sector (including schools and libraries) has a primary place in, and can benefit from, the NII.

14. We believe that the current proceeding offers a unique opportunity to stimulate increased investment in technologies and services that will bring the benefits of the NII to schools and libraries more rapidly than otherwise would be the case. We do not believe this opportunity should be passed by, and we offer these comments to help the Commission in shaping an appropriate policy to encourage investment in the NII for education.

15. Incentives need to be created to stimulate increased investment by manufacturers of Part 15 devices that will ease the connection of schools and libraries to the NII in the most cost-effective way possible. We submit that including educational uses in new rule section 90.361(c)(2)(ii)(B) will encourage such connections to the NII and is as justifiable, if not more so, as including public safety and emergency radio uses in this new rule section.

16. Under our proposal, public schools and libraries will gain the benefit of wireless interconnection to the NII with the attendant reduction in costs associated with wireless, unlicensed devices. The Coalition estimates that it will cost as much $10 billion to wire every classroom in America. This is a staggering cost to the nation's educators, some of whom cannot afford even

teachers' salaries and books much less hi-tech learning innovations like the NII. Wireless connection to the NII, on the other hand, is less expensive by an order of magnitude. By any standard, connecting every classroom in America to the NII is in the public interest.

17. The Coalition believes that its proposal will act as an incentive to the Part 15 device manufacturing community to provide connectivity between schools and libraries and the NII because the proposal will bring more Part 15 devices within the "safe harbor" of new rules section 90.361(c)(2)(ii)(B). Because of this proposal, Part 15 manufacturers can be expected to continue to invest in and produce Part 15 devices that will come within this safe harbor and that will provide inexpensive and reliable connectivity by schools and libraries to the NII.

18. The Coalition urges the Commission to amend new rule section 90.361(c)(2)(ii)B to read: "Is providing the final link for communications of entities eligible under Subparts B or C of Part 90 or for communications of schools or libraries."

III. Upon Reconsideration, The Commission Should Modify New Rule Sections 90.353(b)&(c) To Clarify What Types Of Messages May Be Transmitted By LMS Licensees And Their Subscribers and To Provide That No Voice Communications That Interconnect With The Public Switched Telephone Network Will Be Permitted.

19. The Commission should not allow LMS systems to interconnect with the public switched telephone network ("PSTN") nor should voice messages be permitted on LMS systems. The 902-928

MHz band is a shared band. The band is inherently unsuitable for a voice service due to the continuous nature of voice communications. This is true of real-time or store-and-forward voice communications.

20. In a shared band environment, parties sharing the band must use it in ways that will allow sharing. Voice communications in a shared band that is as congested as the 902-928 MHz band is very likely to make educational uses of the band infeasible. The limitations the Commission has placed on voice communications in LMS systems are insufficient to avert the type of congestion envisioned by the Coalition.

21. There is no reason that LMS needs to interconnect with the PSTN to provide a vehicle location service. Voice is a totally different service from vehicle location and is totally independent from vehicle location. LMS providers can locate vehicles without a voice service. Besides, if LMS subscribers want voice capability, those subscribers have many alternatives available to them. There is no need to clutter the 902-928 MHz band with a very spectrum inefficient voice service, particularly one that interconnects with the PSTN.

22. If the Commission cannot be dissuaded from allowing LMS systems to provide voice service, the Commission must clarify new rule sections 90.353(b)&(c) and specify what constitutes

permissible transmissions. Failure to do so will lead to an unrestricted voice use of the band that will intensify congestion. For example, it is unclear just what constitutes "status and instructional messages . . . related to the location or monitoring functions of the system."[14/]

23. Furthermore, the Commission must specify how it is going to enforce any limitations on the permissible types of messages that can be transmitted using a LMS system. It is not obvious to the Coalition just how the Commission is going to enforce such a rule. Inability to enforce the rule will lead to abuse and congestion in the band. The same is true of emergency messages allowed in real-time to interconnect with the PSTN. How can the Commission know that these are the only types of messages being sent on a real-time interconnection basis?

24. The Commission must also define what it means by "store and forward" messages. How long does a message have to be stored before it can be forwarded to qualify to be transmitted on an LMS system because it is a "store and forward" message? If the storage time is minimal, the distinction between store and forward and real time is a distinction without any difference, and the Commission will not have achieved what it says it wants to achieve in terms of limiting the types of messages that can be transmitted by means of a LMS system.

[14/] Section 90.353(b).

IV. Upon Reconsideration, The Commission Should Clarify That New Rule Section 90.361 Applies To Grandfathered Multilateration AVM Licensees.

25. The Coalition is concerned about the immediate applicability of new rule section 90.361 to grandfathered systems. However, new rule section 90.363 is silent on precisely when the new rules govern operation. The Commission should clarify that all new rule sections adopted by the Order apply to all grandfathered AVM systems upon their conversion to the spectrum specified in the new rules. What good will new rule section 90.361 be to schools and libraries if they get Part 15 connectivity to the NII but are unable to use it because their Part 15 devices interfere with a grandfathered multilateration LMS system?

26. New rule section 90.363 does not provide that grandfathered AVM systems converting to LMS status must operate pursuant to new rule section 90.361. Paragraph 64 of the Order provides that grandfathered AVM systems may operate pursuant to the old or new rules until these systems convert to the spectrum specified in the new rules when, presumably, the new rule sections govern operation.

27. To encourage Part 15 manufacturers to continue to produce innovative and cost-effective devices that can be used by educators and students, Part 15 manufacturers must have confidence that the Commission will not continue to allow incompatible users into the 902-928 MHz band or that the Commission will entertain wideband

forward links in the 902-928 MHz band under the refined standards of new rule section 90.353(d). Those are deterrents that would create a chilling effect on investment in, and research and development by, the Part 15 Community.

CONCLUSION

28. The Coalition believes that if the Commission adopts the changes the Coalition suggests herein, it will confirm its leadership in promoting the NII. Furthermore, the Coalition believes that its suggestions are fully consistent with the intent of the Administration regarding connecting classrooms to the NII. The Coalition asks that the Commission give very serious consideration to this Petition. The Commission's decision will affect the delivery of education-enhancing services to millions of students and other learners. It will also have a direct bearing on whether schools and libraries reach the goal expressed by Vice President Gore to connect schools and libraries to the NII.

Respectfully submitted,

CONNECTIVITY FOR LEARNING COALITION

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Dated: April 24, 1995